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ABSTRACT

Curriculum research appropriately follows, rather than precedes, development. According to the "breakthrough" view of research, curriculum development and curriculum practice exhibit a deductive applied relationship to curriculum research. The obvious fault in this view is that it ignores the milieu of value claims about what is ideal and what is best under the circumstances and, instead, makes the assumption that a research "is" has the power of a practical "ought" prescription. The general problems for research are those of elaborating the practical circumstances and practical possibilities entailed by particular theories and lines of research, the matching of these into more or less compatible mixes, and the making available of this work to practitioners. The principal aim of curriculum research is less with the generation of new knowledge than it is with the improvement of school practices. The principal function of teachers in curriculum decisionmaking is to arrive at a defensible basis for choice among an array of alternatives. The preparation of these alternatives remains as a research and development problem. A second line of research is in the field of graduate level instruction in curriculum. This field is in need of theoretical development of terms and frameworks useful in readying research findings for use by education students. (Author/DN)

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Research Problems in Curriculum: Alternative Paradigms

[Notes for Discussion]
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I. CURRICULUM RESEARCH APPROPRIATELY FOLLOWS, RATHER THAN PRECEEDS, DEVELOPMENT[1]

1. A highly questionable "is-ought" assumption is made when research proceeds without regard to development. Yet this is reasonably common procedure for curriculum research. Furthermore, this procedure represents a fairly deep-seated operational paradigm in our field. For instance, I was quite vigorously challenged by a group of students and faculty in a recent invited seminar where the main argument of my protagonists was modeled on the notion of a research "break-through". If Watson and Crick could stumble on a genetic code, opening up unlimited vistas in both theoretical and practical domains of the biological sciences, so might single-minded and practice-free research open up theoretical and practical vistas in curriculum. So goes the protagonists' argument.

According to the "break-through" view of research, curriculum development and curriculum practices exhibit a deductive applied relationship to curriculum research. The knowledge sources for planning curricula are seen to reside in foundation fields such as politics, systems theory, economics, sociology, psychology, and curriculum theory. For instance, research on children's cognitive development may result in accounts of developmental stages, cognitive structures, or performance structures. These accounts are then treated as givens to be properly applied in curriculum planning. The obvious fault in this view is that it ignores the milieu of value claims about what is ideal and what is best under the circumstances and, instead, makes the assumption that a research "is" has the power of a practical "ought" prescription.

1.1 The "is" from research is best seen as a conditioning variable and not as a prescriptive "ought".[2] This follows from a way of thinking about

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[1] Much of this section is adapted from my "The Functions of Curriculum Development", Interchange, Vol. 3, Nos. 2-3, 1972, pp. 161-177.

[2] This section is adapted from my "Logical Reasoning in Science Education", a review article commissioned by ERIC and subsequently published in Theory Into Practice, "Teaching the Young to Think", Vol. XII, No. 5, December, 1973, pp. 278-285.

EA 006 161

the translation of research into practice which treats the "is" as singular and the "ought" as having many possible versions. For instance, given controlled conditions such as student age, and degree and kind of teacher intervention, and guided by a notion of how concepts correspond to phenomena, it may be found that students develop specific and flexible reasoning strategies for the induction of concepts. Knowing this, what "ought" to be the curriculum developers plans? For good reasons the developer may be uninterested in logical reasoning and simply ignore the research. Supposing, however, that he is committed to logical reasoning he will have to diagnose the characteristics and needs of his students and match these with the conditions under which the research was done. From this process, he may, quite tentatively, decide that "X" ought to be done. Another planner, however, with different aged children, or in a different community with different socio-economic characteristics, may decide that some variant of "X" or even "Y" ought to be done.

1.2 The diversity associated with the "is-ought" character of the translation of research problem is further complicated by recognition of two major modifying agents, the teacher and the materials of instruction. These agents are not merely annoyances to be circumvented, for example, by teacher proofing of materials or by student remediation consistent with the materials, but are effective determiners in their own right. Accordingly, even when he has chosen a set of "is-ought" connections based on his consideration of his students and of the conception of, for example, logical reasoning governing the research in question, the curriculum planner needs to give further consideration to the characteristics of the teachers and of the materials in which the ideas on logical reasoning will be embodied. Such matters as the language adopted by the teacher and by the materials developer; the sense of authority on the truth and soundness of knowledge claims adopted by the teacher and the materials developers; and the extent of independent student logical thinking encouraged, can potentially alter a student's development of logical reasoning ability. Thus, for the curriculum planner, what ought to be done is further conditioned. Taken together, the various conditioning variables in curriculum planning are so important as to reduce the "is" to the status

of another conditioning variable. Research outcomes are simply one of those variables considered by the planner as he matches curriculum variables of a particular setting.

1.3 To summarize these remarks on the translation problem, we note that there are no necessary curricular "oughts" for an "is" on logical reasoning, and there are multiple possible curricular "oughts" for any single "is". Furthermore, the "is" of a research finding is itself best seen as a conditioning variable on what "ought" to be done. Research aimed at being useful in practice avoids "controlling" the conditioning variables and, instead, takes them simultaneously into account.

2. Curriculum research is often normative with respect to particular guiding conceptions and may, accordingly, easily be misapplied to a situation where other guiding conceptions are involved. In terms of the curriculum SIG this amounts to research conducted in terms of one paradigm being applied to problems and themes conceived in terms of another paradigm.

For instance, a line of research in cognitive psychology may have conceived of the child as a discoverer of true constructed categories of the real world. Research may have demonstrated successful learning and instructional strategies for attaining those categories and may have suggested criteria for the selection and organization of curriculum content to be representative of the categories. However, the research is of little use to a curriculum developer or practicioner who conceives of a learner as idiosyncratically structuring personal experience to suit his needs. Nor will the research be of value to a developer or practicioner who conceives of a child as an inquirer capable of using the various logics of disciplined inquiry for recovering and evaluating the status of knowledge claims. The conceptions do not, of course, necessarily exclude one another from use in different parts of a curriculum. What is excluded is the application of research, based upon one conception, to curriculum planning based upon another.

2.1 *The conceptual organizers of development and of practice are one of the key targets requiring research.* Quite appropriately, curriculum development and new curriculum practices are initiated by the construction of ideas and terms thought to account for some problem or need in practice. My

colleague, Len Berke, calls these "rhetorical inventions" and gives as an illustration intellectual skills and instructional objectives.[3] The list could easily be increased by such current terms as "individualization" and "open-education". These notions are formulated in practice and are not ordinarily derivative from research. But once established as a guiding conception for development and for practice, these terms require both analytic study concerned with elaborating meaning under different possible practical circumstances and they require empirical research on those possibilities under actual school curriculum circumstances. Without such research on guiding conceptions "bandwagons" take hold with only superficial effects.

2.2 Any particular theory or line of research gives only a partial view of its subject. Accordingly, it is easy to attribute far more generality to the results than is warranted when research is pursued prior to a clear assessment of its need and domain of applicability. A fully developed account of this point is given by Schwab (1971), whose position is as follows. Each theory represents one of several possible starting points for curriculum development. Thus, a theory of enquiry represents a subject matter starting point and a theory of ego development represents a psychological starting point. Furthermore, there is considerable variation within each such starting point. Thus, there are multiple theories of subject matter and there are multiple theories of ego development. The various starting points may be likened to the major directions on a compass and the multiple theories within each to slight movements of the pointer. Furthermore, each theoretical view is associated with a particular range of curricular possibilities. To give a simplified example, within a subject-matter starting point it is possible that a theory of inquiry will maximize student understanding of how knowledge is developed and changes, and will minimize content coverage, while it is possible that a theory of the logic of the interrelations among concepts and between these and the world will maximize concept coverage at the expense of an understanding of how concepts arise and function in inquiry.

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[3] Berke, Leonard, Remarks on "The Inadisability of Reducing Subjects to Other Things", Department of Curriculum Seminar, OISE, April, 1974.

Given this view, the general problem for research is that of elaborating the practical circumstances and practical possibilities entailed by particular theories and lines of research; the matching of these into more or less compatible mixes; and the making available of this work to practitioners.

In making the case that curriculum research ought to follow from curriculum development and curriculum practice, a number of research areas and problems are identified above. Consistant with the case, there are two possible lines of research currently of special interest to me. These are diagramed below in Figure 2. The two lines of research are in no way intended to be inclusive of the kinds of research that ought to be pursued.

The lines of research eminate from a central notion of the teacher as curriculum decision maker and of the consultative support needed by the teacher in this role. The account that follows briefly describes the "research paradigm" involved and sets out the two lines of research.

II. FORM AND CONTENT OF THE PARADIGM GOVERNING THE PROPOSED RESEARCH

Following Schwab's lead, our paradigm form is given by the notion of curriculum as a practical activity and the study of it as a practical discipline. The word "practical" is not intended to convey our conventional wisdom on the use of the term. To be "practical" is to be concerned in the final analysis with unique school events--for example, with a single classroom, a specific child, or an individual department. The end in view is action, rather than knowledge, as is the case where theoretical disciplines. *Thus, the principle aim of curriculum research is less with the generation of new knowledge than it is with the improvement of school practices.* Individual studies may, of course, be empirical and aim for empirical generalizations or be theoretical and aim for broad statements of principle. But to be of significance as curriculum research, these studies should have a demonstrable origin in inadequate classroom practice and should be seen to bear on the improvement of that practice. The work is incomplete until the relationship between empirical or theoretical findings and practice is established.

1. There are two sides in this effort, the scholars and the practitioners (see Figure 1) with graduate studies seen as a mediating loop. The graduate studies role is described in section IV of this paper.

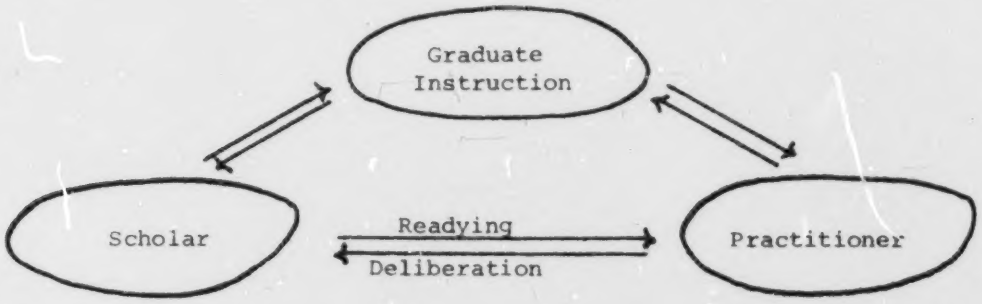


Figure 1

The scholar readies knowledge for practical use or for purposes of instruction in several ways. Among the most important of these are the matching of different, competing, knowledge claims and the setting forth, explicitly or through an instructional methodology, of the assumptions and theoretical perspectives in terms of which the knowledge was generated. For example, one might set forth knowledge on classroom discussion by comparing and contrasting the work of Bellack with that of Flanders, and by setting up for inspection the underlying assumptions in each.

From the practitioners perspective the translation of curriculum ideas and generalizations into practice depends upon a deliberative process undertaken by the practitioner in which there is a reflexive exchange between the ideas and the pecularities of the individual situation at hand. In the process, the ideas are legitimately warped and woofed with the uncomfortable consequence for the scholar that he will rarely see his ideas enacted in pure and pristine form. Such warping and woofing is not the consequence of miseducated teachers or bad theory but is in the nature of the beast. It is worth noting that this two-sided methodology for relating research and theory with practice is very different from the traditional mode of deduction and application.

2. Another feature of a "practical" field is that its individual events vary from place to place and from time to time. Accordingly, there will be a legitimate variation from teacher to teacher or from classroom to classroom as ideas are translated. What the empirical researcher calls "statistical error" may be more properly seen as a substantive dimension of the variation of individual events. Whether we are empiricists looking at our error term or theoretical researchers looking at the variations in practice (for example, all the different ways a sample of test-teachers use a set of curriculum materials) we may be more easy in our mind with a "practical" point of view and more "pained" if our bent is towards the theoretic.

3. Still another practical feature of curriculum is its ethical character. Decisions of practice and decisions of scholarship are always concerned with what ought to be done. It is impossible to teach without reflecting a sense of value on what is worth teaching. Likewise it is impossible to do research in curriculum without reflecting a sense of value about what is worth learning. As noted in the earlier remarks of this paper, the principle difficulty with which the "ought" characteristic confronts us is to determine a legitimate movement from the "is" of research and theory to the "ought" of our graduate instruction and of our activity on behalf of practice. We do, of course, frequently fall into the habit of slipping directly over to practical prescriptions from research findings. But it is well known that logically a prescriptive premise is required to move from an "is" to an "ought". Furthermore, this inserted premise comes from some other source than that which generated the "is". Thus, when the direct slip to practical prescription occurs, there is a hidden premise derived from some unnoted source.

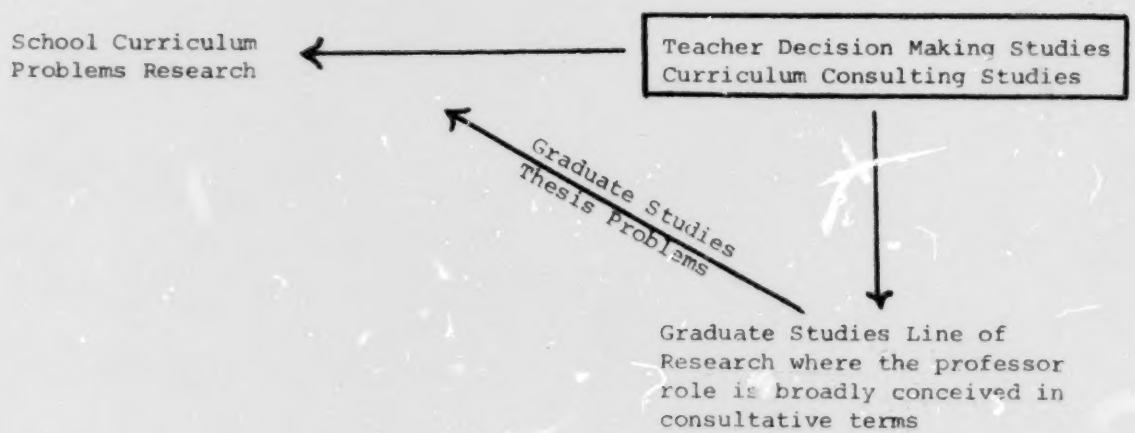
4. The content of this paradigm, the form of which is briefly described above, is given by the subject matter of instruction and by practical school problems found in a particular time and place.

III. THE TEACHER AS CURRICULUM DECISION MAKER AND THE CONSULTANT FUNCTION

A current school curriculum problem is given by the teachers role as a curriculum decision maker. In an international study conducted for the Center for Educational Research and Innovation (CERI), Ralph Garry and I found that this role is currently found or under discussion throughout various parts of the world. Associated with this role is the consultative role performed by others, especially program or curriculum consultants, principals and department heads. The significance of the consultative function is particularly high when teachers assume the responsibility for making curriculum choices, rather than following pre-established content and methods.

These problem areas and two of the lines of research generated by them are set forth in Figure 2.

Figure 2

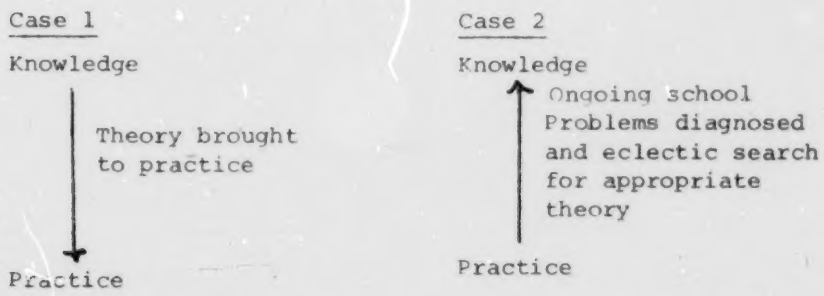

School Curriculum Problems Research
Teacher Decision Making Studies
Curriculum Consulting Studies
Graduate Studies Thesis Problems
Graduate Studies Line of Research where the professor role is broadly conceived in consultative terms

Two sets of research problems flow from these focal areas--teacher decision making studies and curriculum consulting studies. Currently, there a number of studies in progress aimed at facilitating the teacher's curriculum decision making capability. My own Deliberation and Choice project is one such example. Other examples are the work of John Goodlad, George Beauchamp, and that of my colleagues Ellen Regan and Ken Leithwood. *A long sub-set of specific researchable problems could be easily identified in this area.*

It is my impression that there are even fewer ongoing curriculum consultant studies than there are of teacher decision making. Ellen Regan recently reviewed the literature in this area[4] and found no significant indepth studies, although there were a host of more or less rhetorical and persuasive type materials available. The following is suggested as one possible starting point.

1. Concepts potentially useful in dealing with research on consultation are school problems, knowledge, translation, and locally felt need. Properly done, the consultancy function is one of bringing knowledge to practice without either being involved in the knowledge generation itself or with the practice itself. In this sense a consultant functions as a translater of theory into practice. It is possible, of course, for the consultant to be more or less on the side of theory or more or less on the side of practice. In some instances this may be a matter of personal preference and in other cases it is determined by the needs of the situation. Two cases reflecting these variations exist and would, in all probability, yield different sorts of research problems. See Figure 3.

Figure 3: Movements in Consultancy



In case number one the consultant has access to a theory, knowledge findings or perhaps a program, which he believes is in the interest of the clientel in his jurisdiction and which he hopes to implement in some form. In all probability

[4] Regan, Ellen M., "Conceptualizing the Role of the Educational Consultant", a paper delivered at a Professional Development Day for Educational Consultants from the Peel County Board of Education, Ontario, March 1974.

he will adopt the traditional consultant mode of setting up workshops for purposes of implementation or he may simply resort to stock answers in terms of the theory when consultative requests develop. A consultant may also perform an outsiders assessment role in which problem areas and matters for improvement, not seen by practitioners, are identified by him.

In case number two the consultant operates in a more responsive way operating as a diagnostition when called upon. His committment in case two is to serving the needs of a practitioner and he will be more inclined to survey an array of knowledge alternatives of possible benefit to the practitioner. He may take a less active role than the case two consultant in determing areas of practical need.

The first major research problem for curriculum consultancy is to elaborate and conceptually test ideas such as the above. These would then have to be tested against practice to determine their adequacy, for example, a simple empirical study aimed at determining actual consultant practice would be needed to judge the adequacy of the above two cases. Major problems would then follow on questions of consultant procedure, effectiveness, training needed to operate according to certain modes (e.g., cases one and two) and so forth.

IV. TWO LINES OF RESEARCH WHICH FLOW DIRECTLY FROM STUDIES ON TEACHER DECISION MAKING AND STUDIES ON CURRICULUM CONSULTANCY--SCHOOL CURRICULUM PROBLEMS AND GRADUATE STUDIES PROBLEMS

It may reasonably be assumed that, while teachers are the effective curriculum decision makers, they will only nominally act as materials developers. Their principle function in curriculum decision making is to arrive at a defensible basis for choice among an array of alternatives. The preparation of these alternatives remains as a research and development problem. *In terms of Figure 1, the problem is that of readying the disciplines for purposes of instruction.* At the simplist level this amounts to the usual textbook or program materials writing. At a level where it would be more useful to the decision making teacher analytic research is needed for the purpose of setting forth assumptions of the field and their possible instructional outcomes. Readying the disciplines involves, at its best, a setting forth of the paradigms within which the research was conducted and the ability to structure materials in such a way as to allow for comparison and contrast of knowledge findings in terms of the assumptions under which the knowledge was generated.

Still another interesting line of research, properly falling under the heading of "readying" of the disciplines, is found in Miriam Ben Peretz's work at Haifa University. Ben Peretz assumes, quite correctly, that all manner of prepared curriculum materials are transparent to a wide range of instructional possibilities and to a wide range of learning outcomes. She has broken with the notion of intended learning outcomes commonly found throughout North America and is concerned with "potential learning outcomes". Thus, for example, Mendel's original research may be read as an historical account of the times or of science itself; as a primer in transmission genetics or as a model of the logic of enquiry. *The major research question is to elaborate an array of frameworks which may, one after the other, be imposed on a set of curriculum materials each yielding different potential learning outcomes.* A large number of sub-problems is easily identified, for example, the theoretical analysis into "PLO's" of existing curriculum materials and the development of teacher capability at either utilizing the analysis or in coming to grips with the frameworks themselves.

2. Turning to the second line of research--research on graduate studies --it is worth noting that for many of us our major potential impact on schools comes through our graduate instruction of other researchers, high level practitioners with doctoral degrees and a large number of principals, consultants, teachers and department heads in our non-doctoral programs. Nevertheless, this process for the most part proceeds with little inspection and certainly with the bare minimum of research. Currently, my own department at OISE is undergoing a major overhaul of its graduate programs. In the time-honoured fashion we are collecting massive amounts of data on curriculum practices as input to the review. However, this does not constitute a serious inquiry into the conceptions governing our work; nor into the instructional practices utilized by us; nor into the consequences of our graduate instruction. It is somewhat ironical that we advocate a scientific approach to learning and spend millions of dollars on school classroom instruction while omiting from scrutiny our own curricular practices.

Seen in this way our problem is somewhat akin to that of the consultant. In the first instance many of those we educate will be in direct consultative roles in one way or another. Secondly, our own instructional function

is not to generate knowledge but to translate it for purposes of our students. In this way we adopt a consultative stance insofar as the definition given above is accepted. *Thus, a set of consultative problems somewhat akin to those identified above ought to be studied at the level of graduate instruction.* For example, there are a host of problems associated with preparing knowledge findings in foundation fields and knowledge findings in the area of curriculum for instructional purposes. Most of us do this in a way that is more or less satisfying to us personally. The issue that arises and which may affect some of our instruction is the degree to which we actually do the preparation for our students, as opposed to providing them with the conceptual tools by which they can make defensible translations and choices on their own. It is entirely possible to offer a first-rate theoretical course reflecting a bias or point of view in which we strongly believe and which can, in fact, be easily defended. However, if the student is not committed to explore the assumptions behind the theoretical stances of the course, and is not permitted to know some of its competing alternatives and their assumptions, then the course amounts to little other than indoctrination. *Thus, the field of graduate level instruction in curriculum is in need of theoretical development of terms and frameworks useful in readying research findings for use by our students. This field also needs empirical studies of the impact of different forms of instruction on graduate students and on the degree to which they are capable of acting independently and autonomously in their careers.*

A specific example of one such study is being initiated by one of my colleagues in the coming year. Doug Roberts proposes to elaborate a theoretical framework useful for mapping a restricted range of the curriculum field for purposes of a doctoral level course entitled "Alternative Theoretical Perspectives" (our ATP course). It will be seen that this study is not merely an instructional problem but constitutes a research service to the field of curriculum itself.

The last point I wish to make is that the two lines of research noted above will be connected by our graduate students who will draw from the first line of research for purposes of their graduate thesis.